

**PATENT APPLICATION**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

TANAKA, Toshinori, et al.

Appln. No.: Not Yet Assigned

Confirmation No.: Not Yet Known

Group Art Unit: Not Yet Assigned

Filed: November 14, 2001

Examiner: Not Yet Assigned

For: ARMATURE FOR A DYNAMO-ELECTRIC MACHINE

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

**IN THE TITLE:**

**Please delete the present title and replace it with the following new title:**

--ARMATURE FOR A DYNAMO-ELECTRIC MACHINE HAVING OFFSETTING  
AND OVERLAPPING COILS--

**IN THE SPECIFICATION:**

Amend the specification by inserting before the first line the sentence:

--This is a continuation of Application No. 09/266,606 (Confirmation No. Unassigned )  
filed March 11, 1999, the disclosure of which is incorporated herein by reference.--

**IN THE CLAIMS:**

**Please add the following new claims:**

- 6. A method for manufacturing an armature for a dynamo-electric machine comprising:
- securing a core to a shaft, wherein said core has a plurality of slots extending in an axial direction formed on an outer circumferential surface of said core;
- winding a coil on said core comprising the steps of:
- simultaneously winding a first plurality of coil portions on said core to form a first simultaneously-wound coil portion group;
- simultaneously winding a second plurality of coil portions on said core to form a second simultaneously-wound coil portion group, wherein said second plurality of coil portions of said second simultaneously-wound coil portion group are wound offset from said first plurality of coil portions of said first simultaneously-wound coil portion group in the circumferential direction of said core;
- wherein said first and second pluralities of coil portions are formed by winding wires a plurality of turns around a pair of said slots separated by a predetermined number of said slots, wherein said first and second simultaneously-wound coil portion groups are consecutively-wound groups, and wherein at least one pair of adjacent ones of said coil portions within at least one of said simultaneously-wound coil portion groups share a common one of said slots;
- securing a commutator to said shaft, said commutator comprising a plurality of segments;
- and

permanently electrically connecting pairs of said segments that should have the same electric potential with a plurality of equalizing connectors, so that each of said pairs of said segments that should have the same electric potential has a substantially equal electrical potential.

7. A method for manufacturing an armature for a dynamo-electric machine comprising:

securing a core to a shaft, wherein said core has a plurality of slots extending in an axial direction formed on an outer circumferential surface of said core;

winding a coil on said core comprising the steps of:

simultaneously winding a first plurality of coil portions on said core to form a first simultaneously-wound coil portion group;

simultaneously winding a second plurality of coil portions on said core to form a second simultaneously-wound coil portion group, wherein said second plurality of coil portions of said second simultaneously-wound coil portion group are wound offset from said first plurality of coil portions of said first simultaneously-wound coil portion group in the circumferential direction of said core;

wherein said first and second pluralities of coil portions are formed by winding wires a plurality of turns around a pair of said slots separated by a predetermined number of said slots, wherein said first and second simultaneously-wound coil portion groups are consecutively-wound groups, and wherein a number of vacant slots between adjacent ones of said coil portions within each of said simultaneously-wound coil portion groups is nonuniform;

securing a commutator to said shaft, said commutator comprising a plurality of segments;  
and

permanently electrically connecting pairs of said segments that should have the same electric potential with a plurality of equalizing connectors, so that each of said pairs of said segments that should have the same electric potential has a substantially equal electrical potential.

8. A method for manufacturing an armature for a dynamo-electric machine comprising:

securing a core to a shaft, wherein said core has a plurality of slots extending in an axial direction formed on an outer circumferential surface of said core;

winding a coil on said core comprising the steps of:

winding an initial lap of simultaneously-wound coil portion groups;

winding at least one subsequent lap of said simultaneously-wound coil portion groups;

wherein said simultaneously-wound coil portion groups are formed by simultaneously winding a plurality of coil portions on said core, wherein each of said plurality of coil portions is formed by winding wires a number of turns around a pair of said slots separated by a predetermined number of said slots, wherein said initial lap and said at least one subsequent lap are sets of simultaneously-wound coil portion groups that have been consecutively wound while offsetting each consecutive one of said simultaneously-wound coil portion groups in the circumferential direction of said core until all of said slots have been used as a starting position

for winding one of said coil portions of said simultaneously-wound coil portion groups, and wherein the number of turns of said wires in said coil portions in said initial lap is different from the number of turns of said wires in said at least one subsequent lap;

securing a commutator to said shaft, said commutator comprising a plurality of segments; and

permanently electrically connecting pairs of said segments that should have the same electric potential with a plurality of equalizing connectors, so that each of said pairs of said segments that should have the same electric potential has a substantially equal electrical potential.

9. The method for manufacturing an armature for a dynamo-electric machine according to Claim 8, wherein the number of turns of said wires in said coil portions in said initial lap is less than the number of turns of said wires in said coil portions in said subsequent laps.

10. The method for manufacturing an armature for a dynamo-electric machine according to Claim 8, wherein the number of turns of said wires in said coil portions in said initial lap is greater than the number of turns of said wires in said coil portions in said subsequent laps.--

**IN THE ABSTRACT:**

**Please delete the present Abstract of the Disclosure and replace it with the following new Abstract of the Disclosure.**

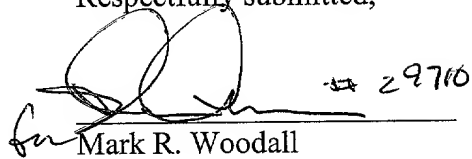
An armature includes a plurality of equalizing connectors for permanently electrically connecting pairs of commutator segments that should have the same electric potential, so that each of the pairs of the commutator segments that should have the same electric potential has a substantially equal electrical potential. In one embodiment, at least one pair of adjacent coil portions share a common slot.

Preliminary Amendment  
• USSN: Not Yet Assigned

**REMARKS**

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,

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**APPENDIX**

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE TITLE:**

**The title is changed as follows:**

ARMATURE FOR A DYNAMO-ELECTRIC MACHINE HAVING OFFSETTING AND  
OVERLAPPING COILS.

**IN THE CLAIMS:**

**Claims 6-10 are added as new claims.**

**IN THE ABSTRACT OF DISCLOSURE:**

**The abstract is changed as follows:**

An armature [comprises: a shaft; a core secured to the shaft having a plurality of slots extending in the axial direction formed on the outer circumferential surface thereof; a coil composed of a plurality of coil portions formed by winding wires a plurality of turns around a pair of slots separated by a predetermined number of slots and offsetting each of the coil portions one slot at a time in the circumferential direction of the core; and a commutator secured to the shaft having a plurality of segments; adjacent coil portions sharing a slot along one side thereof, wherein segments which should have the same electric potential are electrically connected by means of equalizing connectors] includes a plurality of equalizing connectors for permanently electrically connecting pairs of commutator segments that should have the same electric potential, so that each of the pairs of the commutator segments that should have the same electric



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potential has a substantially equal electrical potential. In one embodiment, at least one pair of adjacent coil portions share a common slot.